



WP3 – Information Platform Progress Report

3rd Epiwork Review

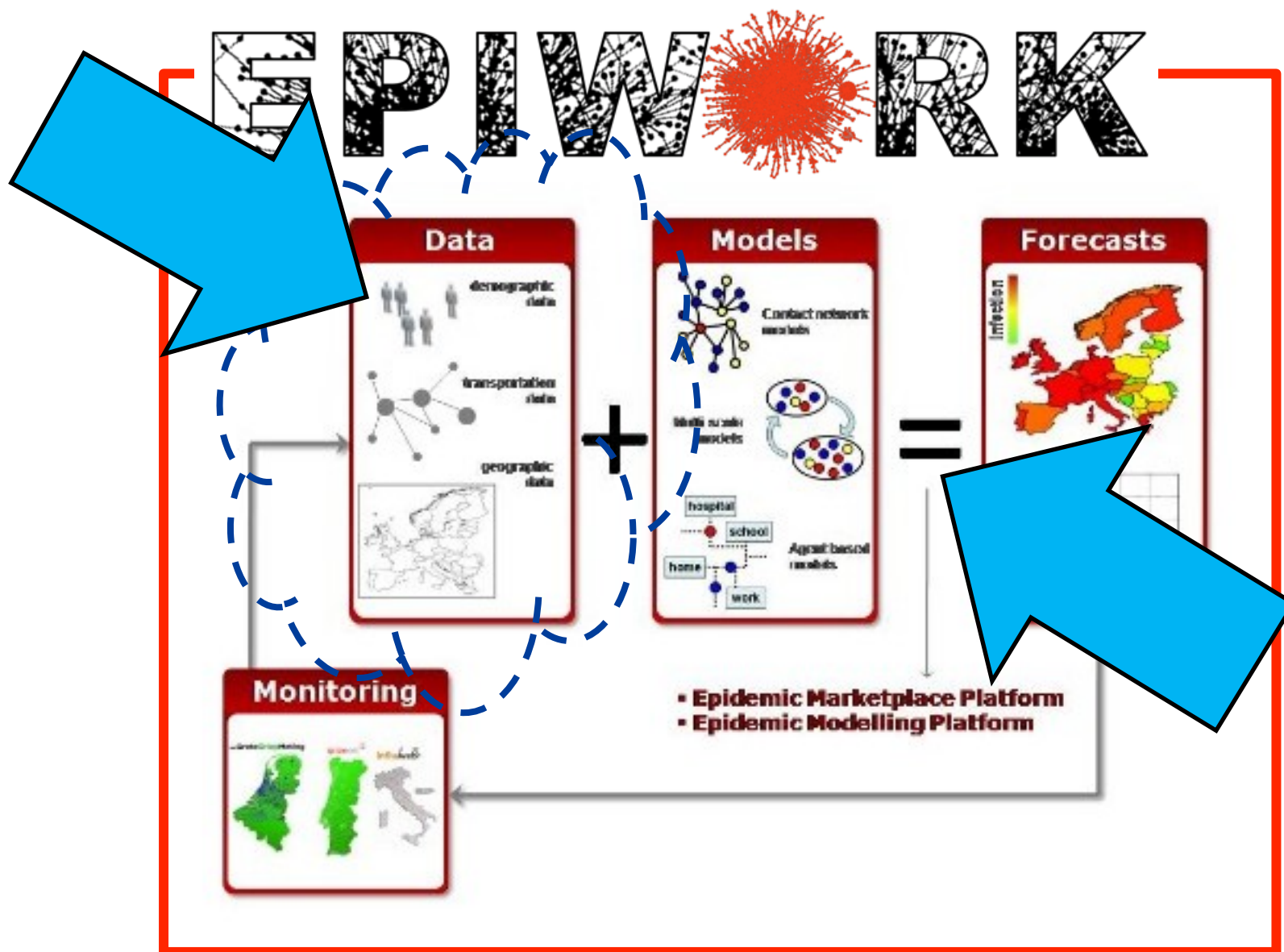
Brussels 28th March, 2012

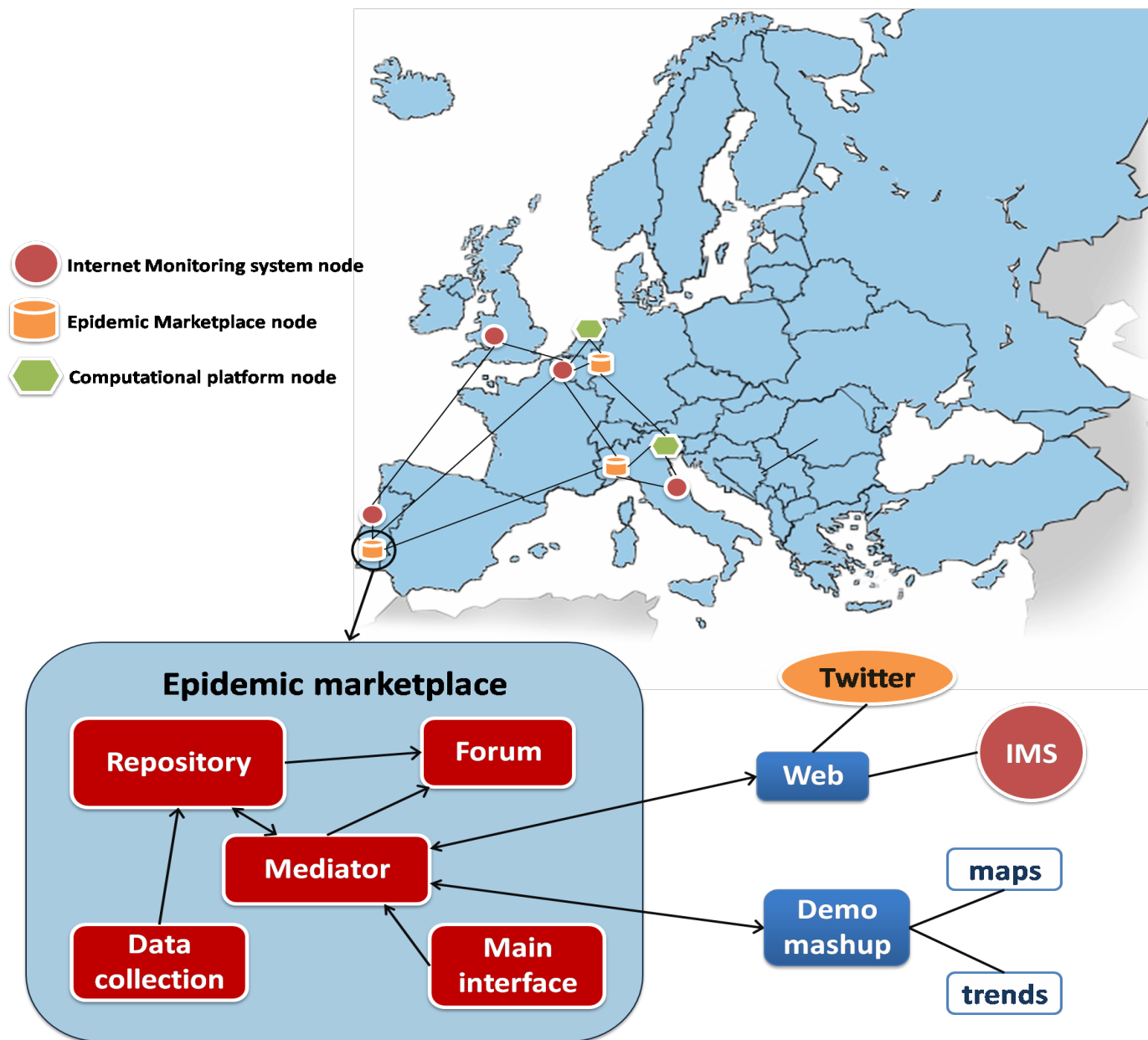
Mário J. Silva

FFCUL

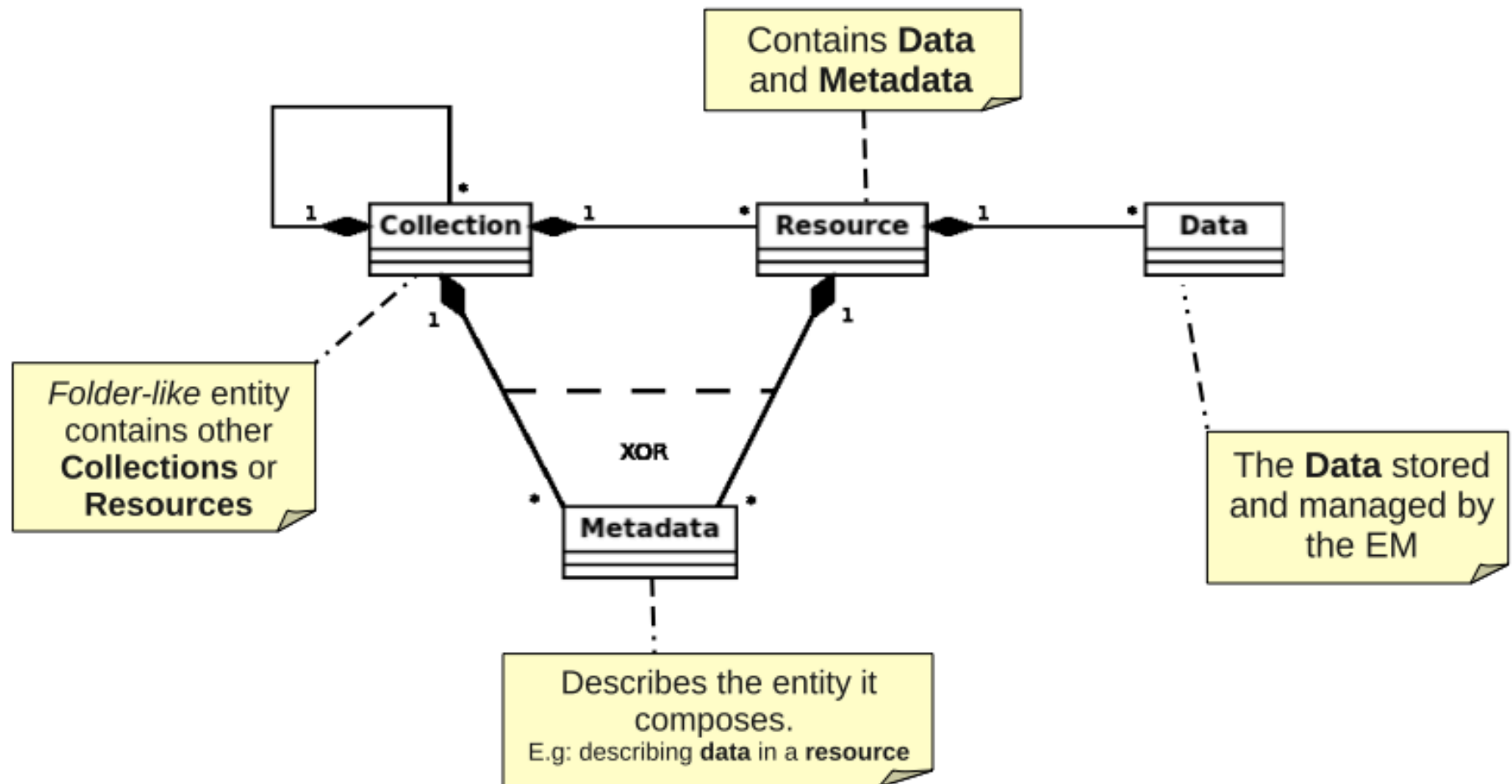
mjs@inesc-id.pt







Conceptual Model of the EM Repository



Scheduled Deliverables

		Year 1			Year 2			Year 3				Year 4	
		M4	M8	M12	M16	M20	M24	M28	M32	M36	M40	M44	M48
WP3	Information platform												
Task 1			D3.1										
Task 2			D3.1										
Task 3				D3.2		D3.3				D3.4			D3.6
Task 4										D3.4 D3.5			D3.6

28 Mar 2012



Information and Communication Technologies

EPIWORK

Developing the Framework for an Epidemic Forecast Infrastructure

<http://www.epiwork.eu>

Project no. 231807

**D 3.4 Epidemic Marketplace
Platform Report at Month 36**

Main Progress in WP3

- A new release 2.0 of the EM, has been online at <http://epimarketplace.net> since the end of 2011. It has a new completely revamped front-end, based on the Drupal Content Management System.


[Home](#)

Resource Metadata

Meta-data	
Title	Twitter dataset H1N1 + Portugal 4-6-2009
Creator	LASIGE node of the Epidemic Marketplace
Subject	twitter message dataset
Description	<p>This dataset contains Twitter messages containing the words H1N1 and Portugal collected between 16-5-2009 and 3-6-2009, Information is a 7 columns relation, containing the following data:</p> <p>Column 1- keyword 1 (disease)- H1N1 Column 2- Keyword 2 (location)- Portugal Column 3- Source (Twitter) Column 4- Author of the message (user id) Column 5- The message body (evidence) Column 6- score Column 7- date (day and hour)</p>
Publisher	Epiwork – http://www.epiwork.eu
Format	text/tab-separated-values
Language	English, Portuguese
Contributor	Luis F Lopes, Joao M Zamite, Bruno C Tavares, Francisco M Couto, Fabricio Silva, Mario J Silva
Relation	Luis F. Lopes, João M. Zamite, Bruno C. Tavares, Francisco M. Couto, Fabrício Silva and Mário J. Silva. (2009). Automated Social Network Epidemic Data Collector. INForum informatics symposium.
Source	http://epiwork.di.fc.ul.pt/collector/
Coverage	Spatial: Portugal, Temporal: 2009-5-16 to 2009-6-3
Rights	Creative Commons Attribution-ShareAlike (CC BY-SA), http://creativecommons.org/licenses/by-sa/3.0/

**Initial Graphic Style
Consortium use only**

Epidemic Marketplace

// Epidemic Marketplace

// Datasets

// Forum

// Web Services

// Data Collection

// Contact

// Learn More

Epidemic Marketplace

... a platform for integrating and sharing epidemiological data.

**V1.0 Graphic Style
Public in 2nd year**

Some features of the Epidemic Marketplace require user authentication. Please [register](#)

Datasets

Forum

Web Services

Data Collection

Announcements

2010.10.01 // Epimarketplace.net is now open to user registrations from the entire community. [\(See More\)](#)

[Browse](#)[Upload](#)[Request](#)

Latest Announcement

New upload

The new upload is now available at v2.epimarketplace.net/newupload

[See More](#)

Advanced Search

[Become a Curator](#)

A curator is a user that has some administrative permissions over the Epidemic Marketplace website. [See more](#)

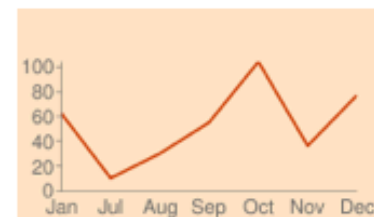
[Developers Corner](#)

You can access to our Web Services, Tools, Manuals and Significance. [See more](#)

100 Resources

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379 Visitors

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[Recent Requests](#) (0)
[Popular Requests](#) (0)
[Recent Uploads](#) (0)

Website Tour

Announced at 3rd meeting
Try it at:
Epimarketplace.net

Most visited documents of the week

[Epi Info](#)

Luis Filipe Lopes

2010-09-17

Epi Info™ and a personal computer, epid ...

Subject: epidemic
Type: Software

[See more](#)

[cumEl Salvador](#)

Daniela Paolotti

2010-06-10

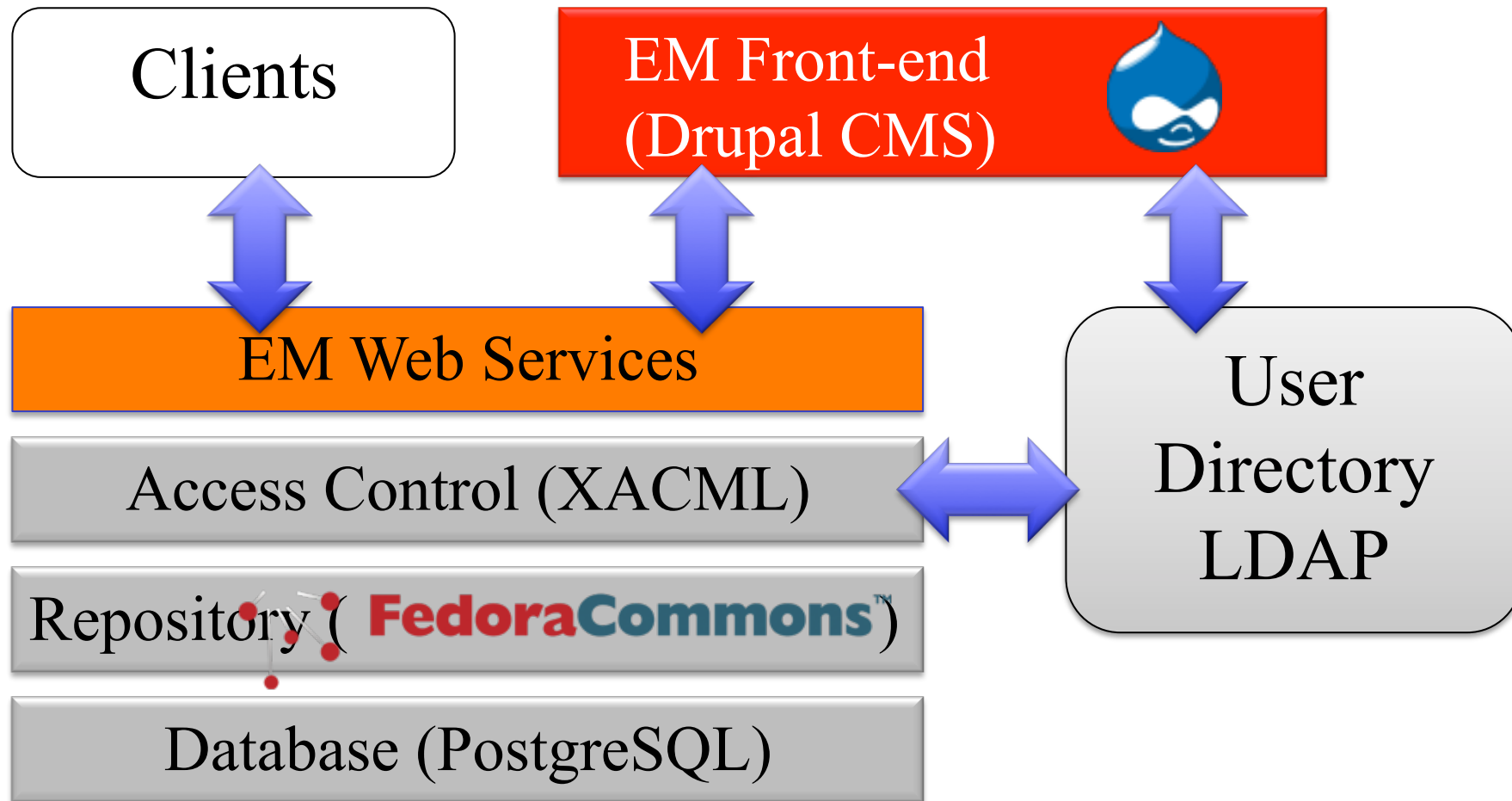
Subject: epidemic
Type: Dataset

[See more](#)

Main Progress in WP3

- Important **architectural changes** have significantly changed the software organization, which now handles the front-end and external clients uniformly. These architectural changes needed a **full rewrite of the web services** component of the system.

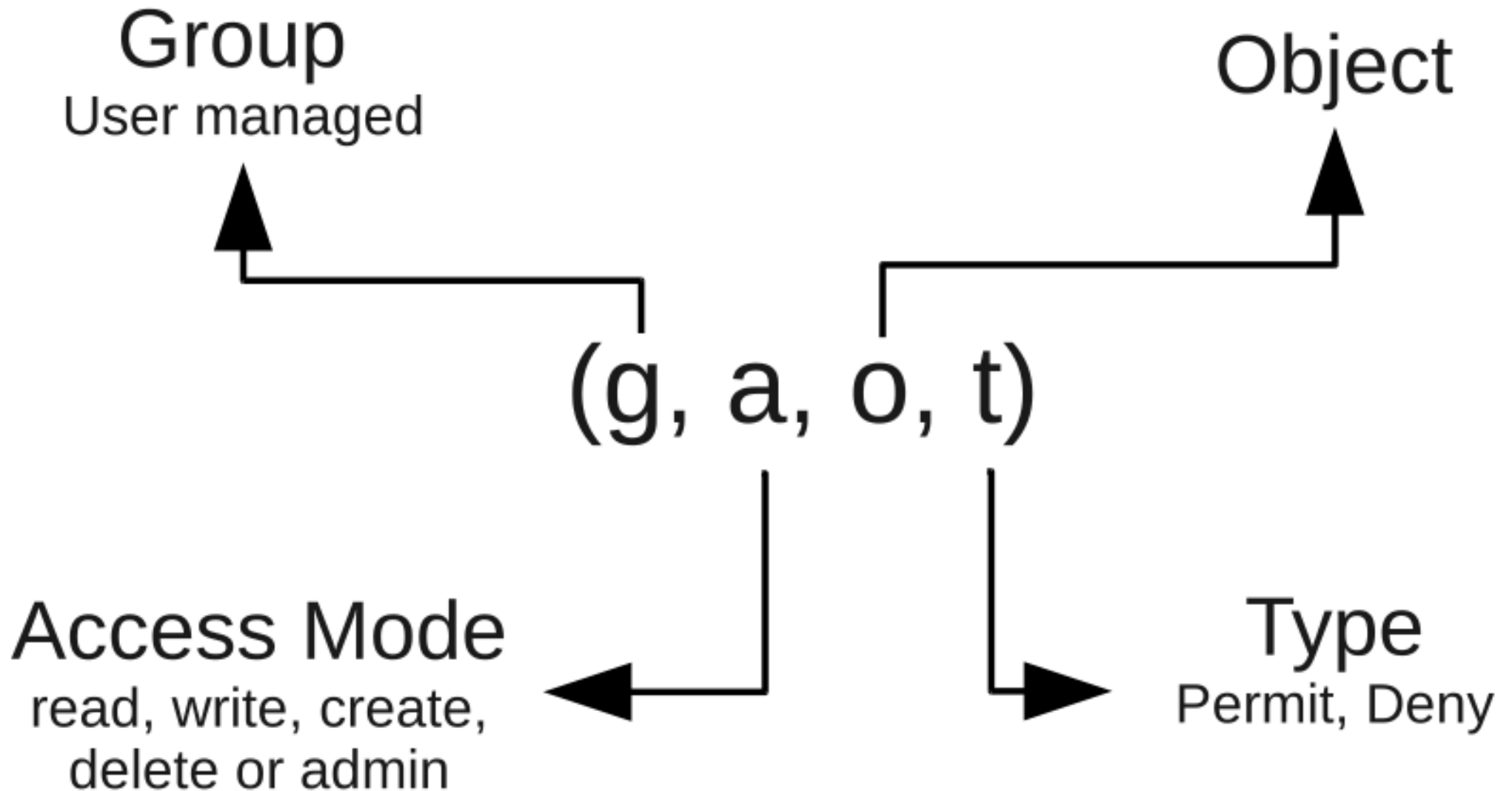
EM 2.0 Software Components



Main Progress in WP3

- The **access control scheme** for the resources in the EM Repository has a user interface, enabling EM users to specify sharing restrictions and visualise access permissions from the front-end.

Access Control Model



Resource

Available actions

ECSS'12 Conference on Complex Systems

Subject:

Generic

City:

Brussels

Country:

BE

Date:

2012-09-03T00:00:00Z to 2012-09-07T00:00:00Z

<http://eccs2012.eu/>

Resource type:

Event

Uploaded by:

Mário J. Silva on 2012-02-22

Description:

As one of the most important annual events in Complex Systems Science, the conference provides a broad forum for the diverse communities engaged in Complex Systems research, ranging from the Life Sciences to Physics, from Computer Science to Social Science, from Mathematics to Origin of Life, and from Networks to Policy Implications.

[View](#)

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Resource Access Permissions



EM
Epidemic Marketplace

Mário J. Silva

Search for...

// Browse // Upload // Request // Contact // Learn More

Define permissions for a resource: ECCS'12 Conference on Complex Systems

Available actions

Permissions for **FedoraAdminGroup** :

☐ Administration ☐ Read ☐ Write ☐ Delete

Permissions for **g2** :

☐ Administration ☐ Read ☐ Write ☐ Delete

Permissions for **Public**:

☐ Read

[View](#)

[View details](#)



[Download](#)

[Share](#)

[Edit](#)

[Delete](#)

EPIWORK



Main Progress in WP3

- The **meta-data model** of the Repository has also been revised. Some of the meta-data elements have been moved in the hierarchy and their names changed.

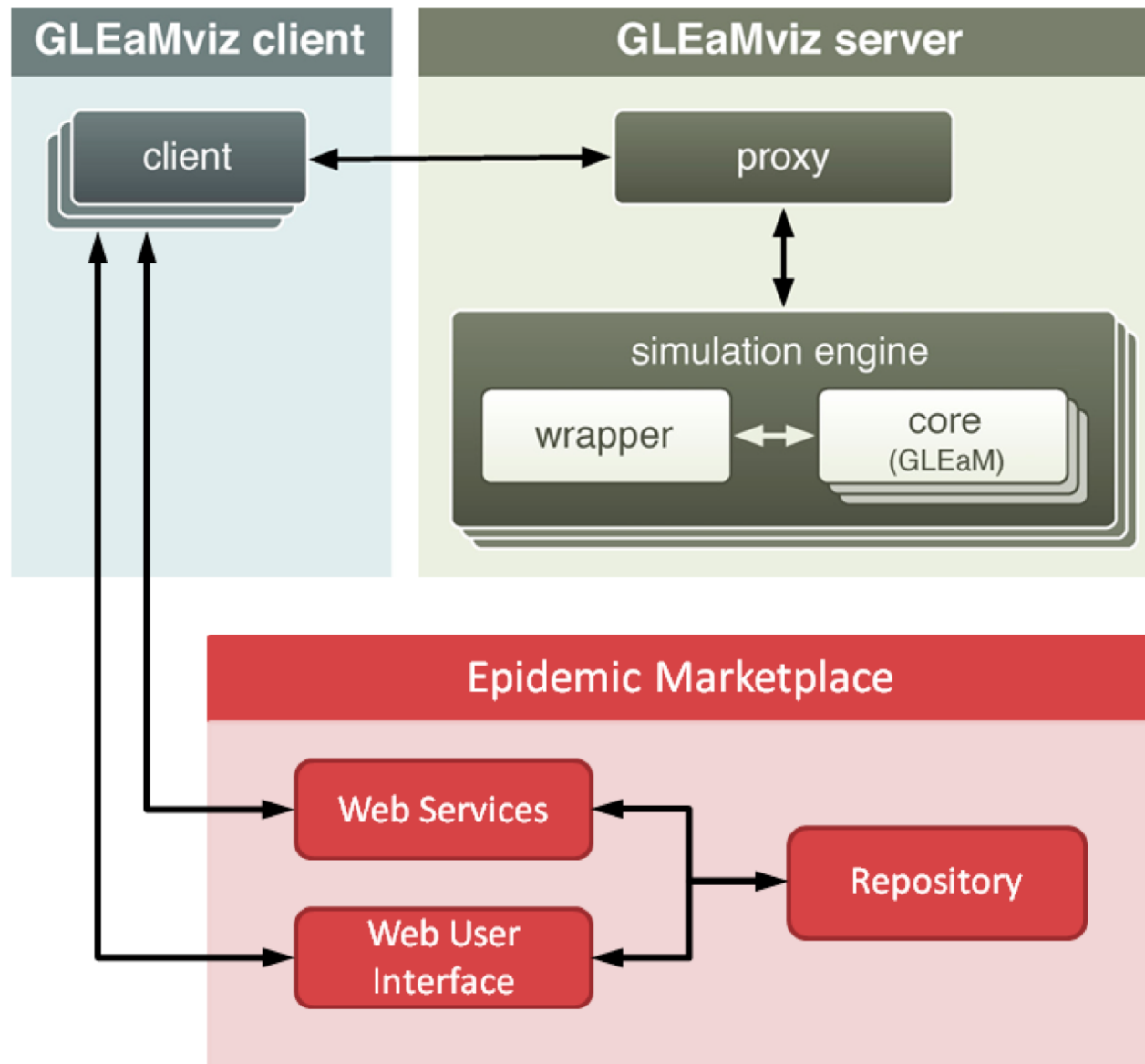
Meta-Data

- Meta-data introduction **even more simplified**
 - Upload/Request forms more simple.
- EM Repository Meta-data Vocabulary
 - Reorganised meta-data structure, reflecting work reported on **Deliverable D3.5**

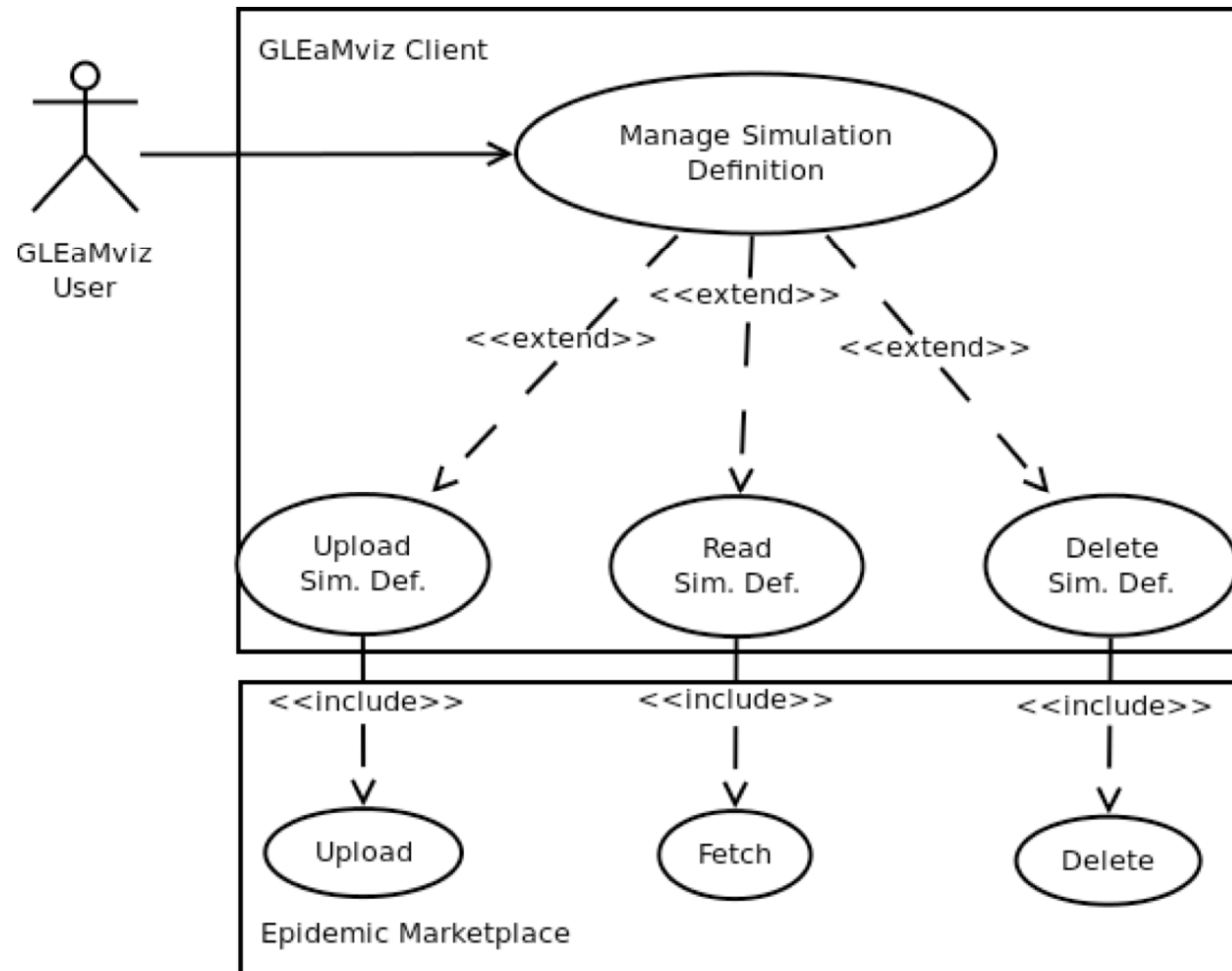
Main Progress in WP3

- Significant progress has been made on the **interconnection with the Computational Platform**, which also **triggered substantial revisions to the EM API**.

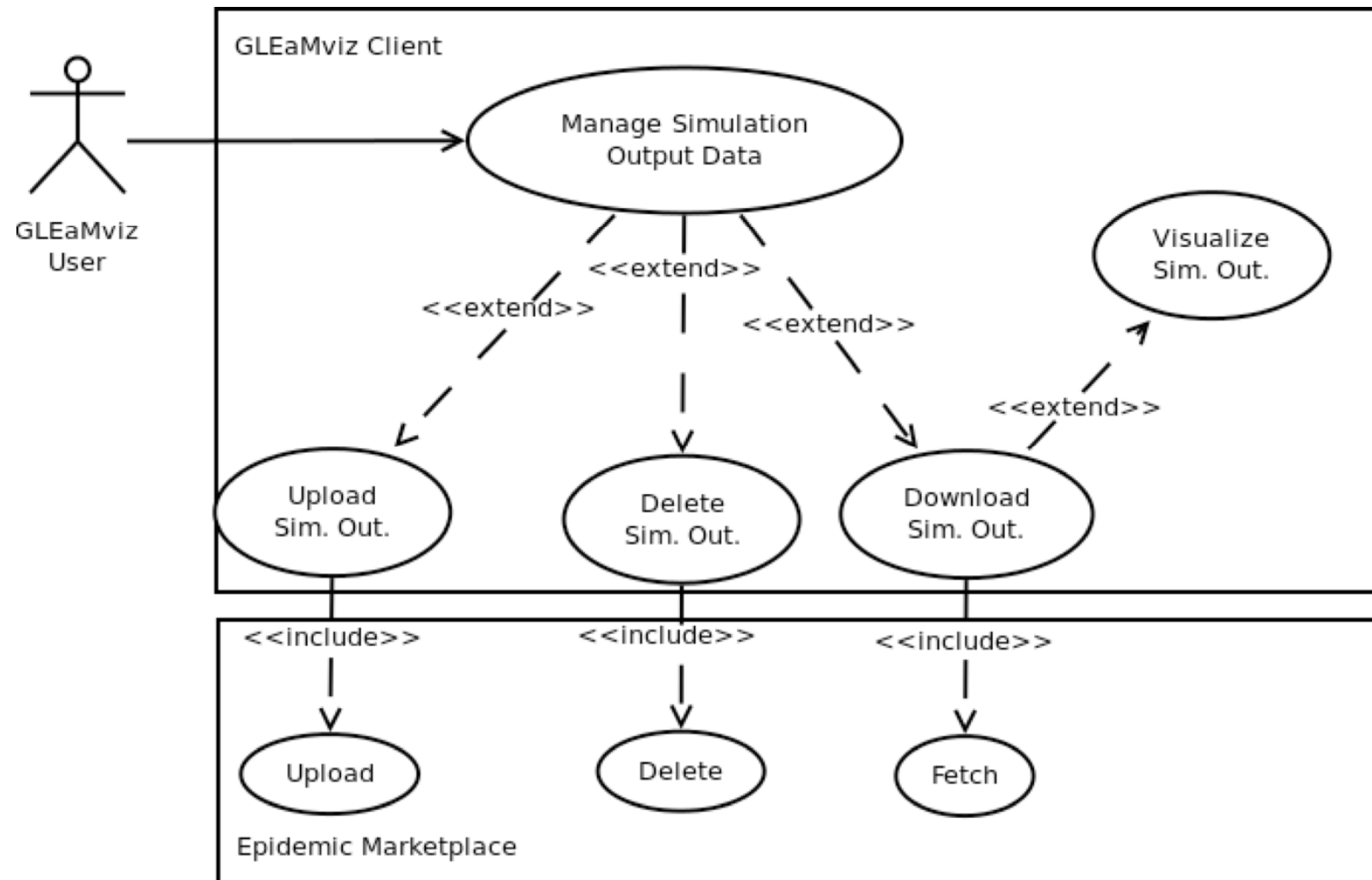
The GLEaMviz software can now upload simulation results to the Epidemic Marketplace for sharing by the community.



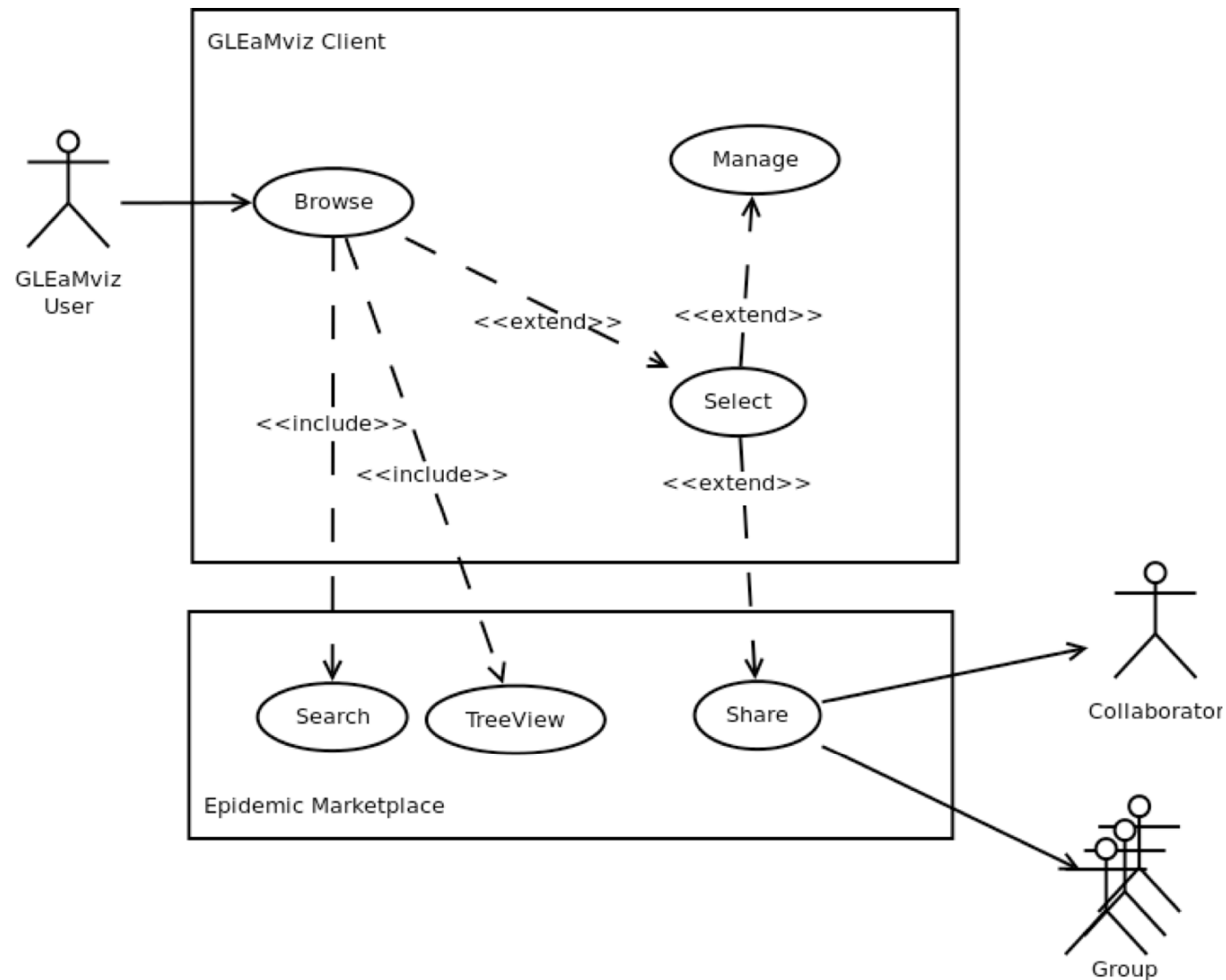
Manage Simulation Definitions Use Case



Manage Simulation Output Data Use-Case



Browse and Share Use-Case

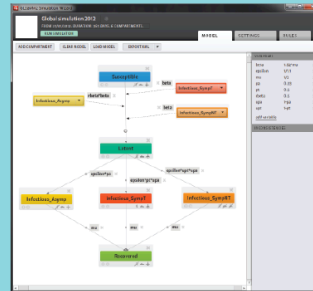




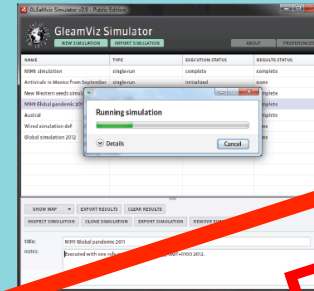
Visiting User



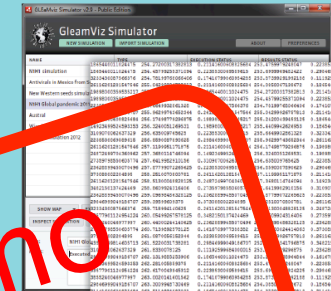
Epidemiologist



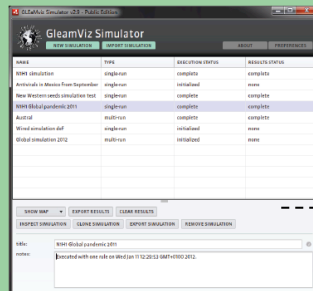
1. Design a new simulation



2. Run the simulation



3. Get the output

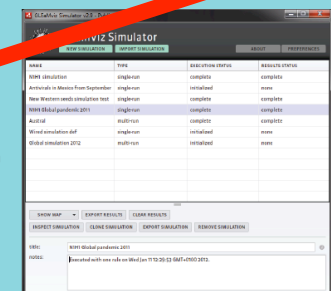


1. Browse the epidemic marketplace

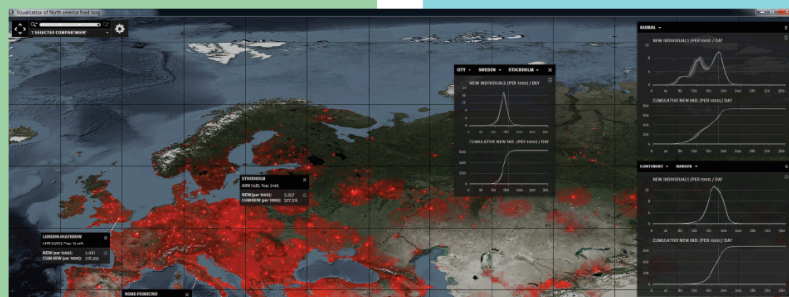
GLEANVIZ
SERVER

EPIDEMIC MARKETPLACE
SERVER

Sync Users



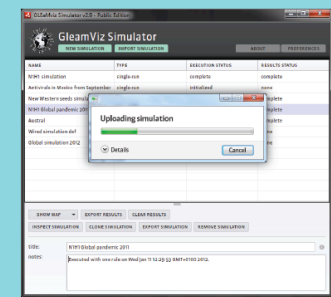
4. Browse the epidemic marketplace



2. Explore the results



6. Share the simulation



5. Upload the simulation

7. Explore the results

Main Progress in WP3

- The user base and number of catalogued resources available in the repository has not, however, enlarged significantly, as initially expected.

This is due to delays on the release of a stable version with better usability and lack of sufficiently interesting data, unique to the platform, that would drive the increase of the number of users of the EM.

EM Statistics Page

Statistics

This page shows repository and usage statistics for the Epidemic Marketplace.

3726 Visits since July/2011

The graphic below displays the number of visits in the last months.



EM Statistics

- Number of registered users (on Jan 31, 2012): 29
- Number of distinct uploaders (on Jan 31, 2012): 11
(some users have registered multiple accounts)
- Number of pending Resource Requests (on Jan 31, 2012): 5
- Number of distinct Resources in the EM (on Jan 31, 2012): 96
(many potential datasets still in other databases in the process of uploading, such as inflenzanet.eu or the EM MedCollector [13])
- Number of distinct visits to the EM Website (during January, 2012, measured by Google Analytics): 757

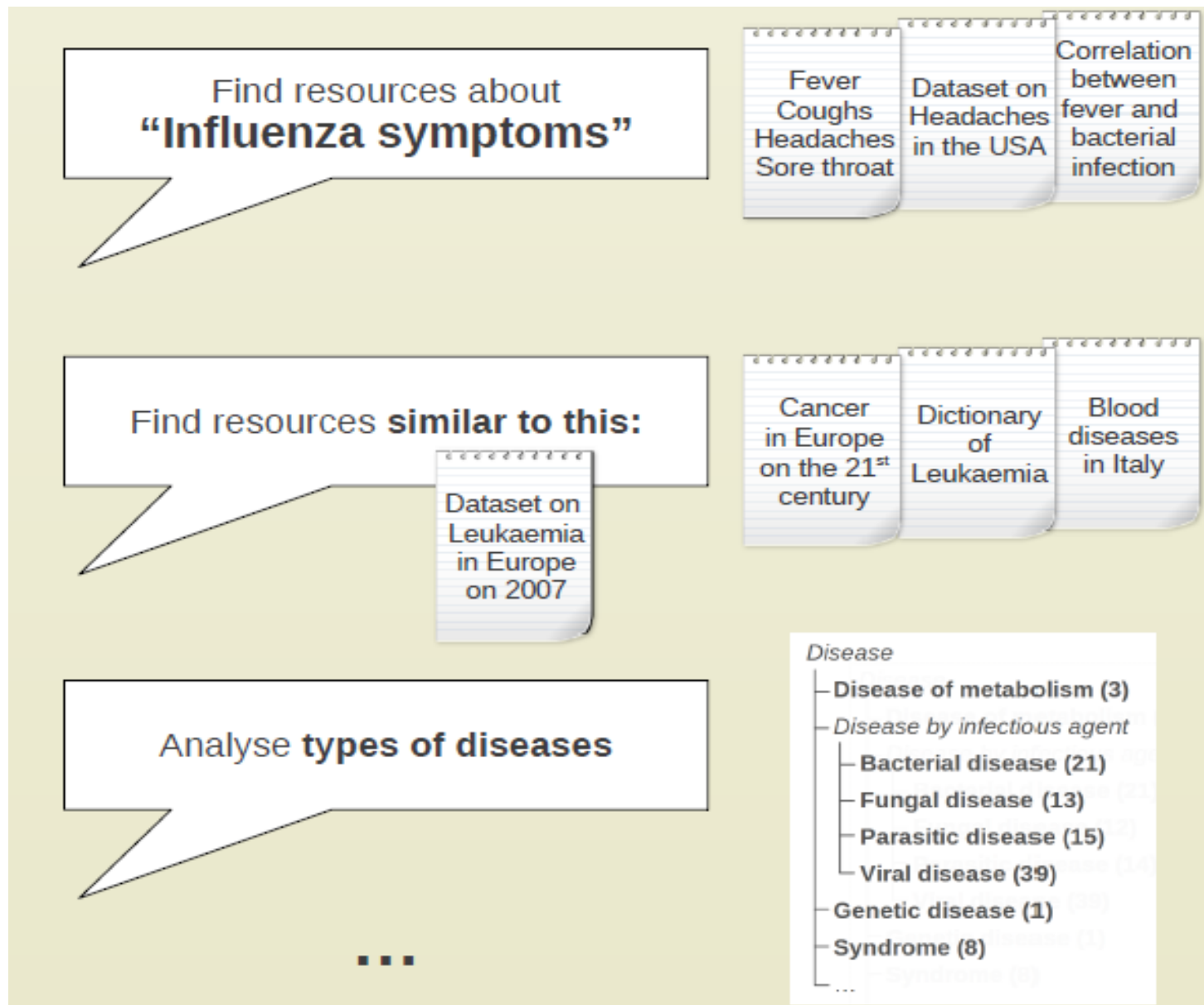


Epiwork Deliverable 3.5: Epidemic data ontology

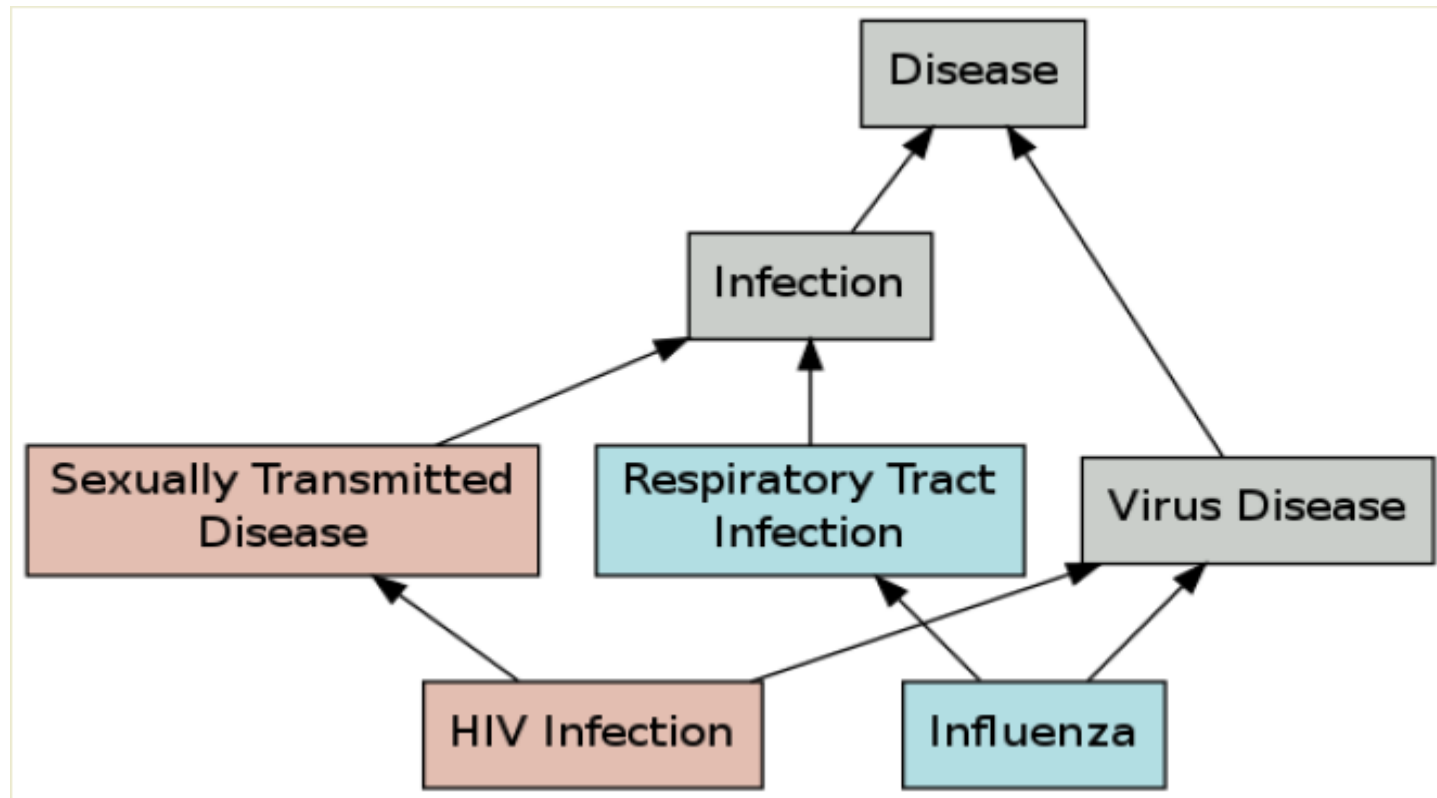
João D. Ferreira¹, Catia Pesquita¹, Francisco Couto¹, Mário Silva¹

¹University of Lisbon, Faculty of Sciences, LASIGE, Portugal

31 January 2012



Ontology



Epidemiology-
related ontologies

“Foreign” epidemic
resources

feedback

NERO

applied on

feedback

applied on

Epidemic
Marketplace

NERO - Network of Epidemiology-Related Ontologies

Ontologies selected for NERO

- MeSH
- GeoPlanet
- ENVO
- TRANS
- CheBI

MeSH used to index articles in biomedical sciences (**general domain**)

GeoPlanet™ representation of the world **geography**

ENVO ontology for the **environment** domain

TRANS describes **transmission** of a pathogen from one host to another host

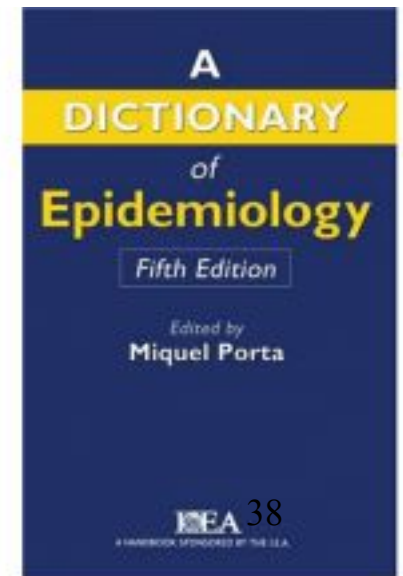
ChEBI ontology of **chemical compounds** focussed on biologically relevant entities



Upload resource	
Title:	Influenza in France
Description:	Contains data collected by an organisation
Disease:	Influenza
Host:	Human
Transmission:	Airborne
Environment:	Temperature, Humidity
Location:	France
Demography:	School years
...	

Dictionary of Epidemiology

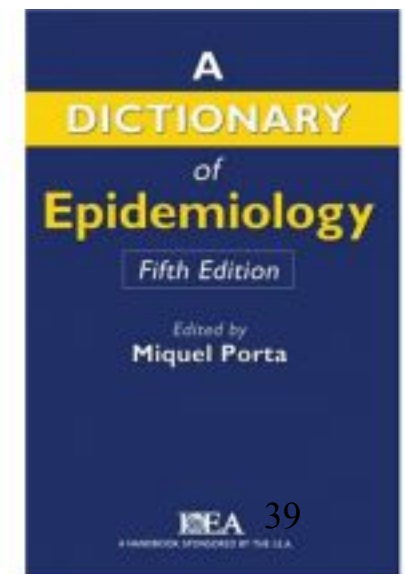
- Contacts with Miquel Porta (editor of the *Dictionary of Epidemiology*, 5th edition)
- Discussing the upgrade of the Dictionary of Epidemiology to an Epidemic Ontology
 - Will add semantic relationships among dictionary terms



Idea: Semantification of the Dictionary of Epidemiology

DISEASE MODEL - Quantitative simulation of the natural history of a disease (incidence, progression, prognosis, etc.) based on epidemiological data. A public health model is population-based and is used in planning and evaluating health services, whereas a clinical model is used in individual patient care.

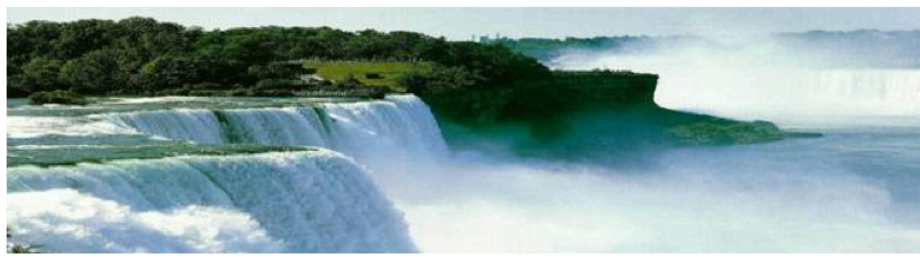
- DISEASE MODEL **is a** Quantitative simulation
DISEASE MODEL **is based on** epidemiological data
- public health model **is a** DISEASE MODEL
public health model **is a** population-based model
public health model **is used** in planning and evaluating health services
- clinical model **is a** DISEASE MODEL
- clinical model **is used** in individual patient care



EE² Events 3rd year

EPIWORK/EPIFOR 2nd INTERNATIONAL WORKSHOP

FAC



International Conference on Biomedical Ontology

University at Buffalo, NY • July 26-30, 2011

NOTE: We have reached sell-out capacity for ICBO events.

Ontologies at their use in a translational biomedical p work well tog coordination need for an involved in t designed to r



Privacy and Crowdsensing: Can't we just be friends?

Mário J. Silva

Universidade de Lisboa, Faculdade de Ciências,
Departamento de Informática

mjs@di.fc.ul.pt

FuturICT's Ethics Meeting (Zurich, June 17 2011)

Exploring the Semantics of Biomedical Ontologies



Francisco M Couto
12 April 2011

EBI External Seminar



INSTITUTO SUPERIOR TÉCNICO
Universidade Técnica de Lisboa



Challenges in Societal Data Management

Mário J. Silva

Instituto Superior Técnico and INESC-ID

mario.gaspar.silva@ist.utl.pt



EM-related Publications (3rd year)

- Zamite, J., Silva, F., Couto, F., Silva, M. 2011: MEDCollector: Multisource epidemic data collector. Transactions on Large-scale Data-and Knowledge-centered Systems IV: Special Issue on Database Systems for Biomedical Applications (6990), 40-72.
- Francisco Couto, Mário J. Silva 2011: Disjunctive Shared Information between Ontology Concepts: application to Gene Ontology. Journal of Biomedical Semantics.
- Catia Pesquita, Francisco Couto. Where GO is going and what it means for ontology extension. International Conference on Biomedical Ontologies 2011.
- Bruno Tavares, Hugo Bastos, Daniel Faria, Joao D. Ferreira, Tiago Grego, Catia Pesquita, Francisco Couto, The Biomedical Ontology Applications (BOA) framework.Proceedings of ICBO 2011.
- João D. Ferreira, Francisco Couto, Generic semantic relatedness measure for biomedical ontologies.Proceedings of ICBO 2011.
- Juliana Duque, Mediação Dados-Informação: Design de Informação para a Epidemic Marketplace. Master Thesis, University of Lisbon, School of Fine Arts, November 2011.

Changes in UL WP3 Team

Out

- Juliana Duque (front-end)
- Patrícia Sousa
(front-end+systems)

In

- João Ferreira (ontologies)
 - Paulo Graça (front-end)
 - Carlos Sousa (front-end)
 - Tiago Posse (systems)
- and
- Cátia Pesquita (ontologies)

FFCUL Team on WP3

- **Mário J. Silva, Dulce Domingos, Francisco Couto, Cátia Pesquita**
- **João Zamite, João Ferreira, Paulo Graça.**
- **Tiago Posse, Carlos Sousa**

WP3: status

- D3.4 and D3.5 delivered
- D3.6 at M48
- Data has been collected and will eventually reach the EM
 - Integration with WP5 is work in progress
- Overcoming the initial difficulties in hiring the planned resources.
 - Refreshing team with competencies required for the 4th year.

Focus 4th Year

- *Enrichment of the catalogue* of epidemic resources.
 - Rich annotations
 - More resources
- Debug + implement (lots)
- Demonstrate integration with Computational Platform - **GLEaMviz**
- New functionalities:
 - Implementing new **social network access control** in EM 2.0
 - Negotiation of access to resources.
- *Dissemination*

[Browse](#)[Upload](#)[Request](#)

Latest Announcement

New upload

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[See More](#)

Advanced Search

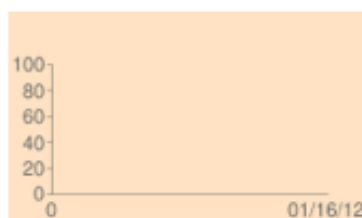
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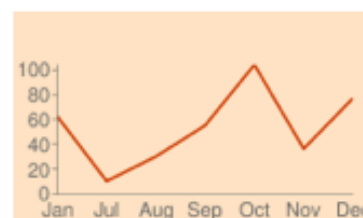
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100 Resources

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379 Visitors

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Website Tour

Announced at 3rd meeting
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Epimarketplace.net

Most visited documents of the week

[Epi Info](#)

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2010-09-17

Epi Info™ and a personal computer, epid ...

Subject: epidemic
Type: Software

[See more](#)

[cumEl Salvador](#)

Daniela Paolotti

2010-06-10

Subject: epidemic
Type: Dataset

[See more](#)

WP3 - Wrap up discussion and timelines before the project review meeting

3rdEpiwork Meeting

Pre Saint Didier Jan 17th 2012

WP3 SWOT Analysis

Strengths

- Epiwork-driven EM
- Standards-based
- Open Source modules
- Supported (until 2013?)

Weaknesses

- **Unpopulated EM**
- Looking for the right policies
- What are the incentives?
- ~~Interfaces to WP4 and WP5?~~

WP3 SWOT Analysis

Opportunities

- Epiwork testbed
- Creation of a baseline for epidemic modeling
- Showcase for partners' outputs

Threats

- ~~Consortium enters “everyone for himself” mode.~~
- ~~“Somebody will take care of that” attitude~~
- EM perceived as a very expensive, complex and useless cache

Todo list and planning (Pré Saint Didier, Jan 2012)

1. Populate Repository
2. New Front-end and updated components
(prepare market)
3. Access control policies & distributed authentication
4. Linked Epidemic Data
5. Ethics, Privacy and Anonimization
6. Replicate EM node

Scheduled Deliverables

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17 Jan 2012